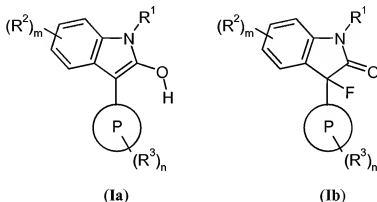


Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Previously presented) A compound of formula Ia or Ib,



wherein the compound is in the form of a free base or a pharmaceutically acceptable salt thereof, and wherein:

P is a 5- or 6-membered heteroaromatic ring containing one or two heteroatoms independently selected from N, O, and S, wherein at least one heteroatom is nitrogen;

R<sup>1</sup> is hydrogen;

R<sup>2</sup> and R<sup>3</sup> are independently selected from the group consisting of halogen, nitro, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl, CHO, C<sub>0-6</sub>alkylOR<sup>4</sup>, OC<sub>1-6</sub>alkylOR<sup>4</sup>, C<sub>0-6</sub>alkylSR<sup>4</sup>, OC<sub>1-6</sub>alkylSR<sup>4</sup>, (CO)R<sup>4</sup>, (CO)OR<sup>4</sup>, O(CO)R<sup>4</sup>, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, OC<sub>1-6</sub>alkylcyano, C<sub>0-6</sub>alkylcyano, C<sub>1-6</sub>alkylCO<sub>2</sub>R<sup>4</sup>, OC<sub>1-6</sub>alkylCO<sub>2</sub>R<sup>4</sup>, O(CO)OR<sup>4</sup>, OC<sub>1-6</sub>alkylCOR<sup>4</sup>, C<sub>1-6</sub>alkylCOR<sup>4</sup>, NR<sup>4</sup>OR<sup>5</sup>, C<sub>0-6</sub>alkylNR<sup>4</sup>R<sup>5</sup>, OC<sub>1-6</sub>alkylNR<sup>4</sup>R<sup>5</sup>, C<sub>0-6</sub>alkylCONR<sup>4</sup>R<sup>5</sup>, OC<sub>1-6</sub>alkylCONR<sup>4</sup>R<sup>5</sup>, OC<sub>1-6</sub>alkylNR<sup>4</sup>(CO)R<sup>5</sup>, C<sub>0-6</sub>alkylNR<sup>4</sup>(CO)R<sup>5</sup>, C<sub>0-6</sub>alkylNR<sup>4</sup>(CO)NR<sup>4</sup>R<sup>5</sup>, O(CO)NR<sup>4</sup>R<sup>5</sup>, NR<sup>4</sup>(CO)OR<sup>5</sup>, C<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>4</sup>R<sup>5</sup>, OC<sub>1-6</sub>alkyl(SO<sub>2</sub>)NR<sup>4</sup>R<sup>5</sup>, C<sub>0-6</sub>alkylNR<sup>4</sup>(SO<sub>2</sub>)R<sup>5</sup>, OC<sub>1-6</sub>alkylNR<sup>4</sup>(SO<sub>2</sub>)R<sup>5</sup>, C<sub>0-6</sub>alkyl(SO)NR<sup>4</sup>R<sup>5</sup>, OC<sub>1-6</sub>alkyl(SO)NR<sup>4</sup>R<sup>5</sup>, SO<sub>3</sub>R<sup>4</sup>, C<sub>0-6</sub>alkylNR<sup>4</sup>(SO<sub>2</sub>)NR<sup>4</sup>R<sup>5</sup>, C<sub>0-6</sub>alkylNR<sup>4</sup>(SO)R<sup>5</sup>, OC<sub>0-6</sub>alkylNR<sup>4</sup>(SO)R<sup>5</sup>, OC<sub>0-6</sub>alkylSO<sub>2</sub>R<sup>4</sup>, C<sub>0-6</sub>alkylSO<sub>2</sub>R<sup>4</sup>, C<sub>0-6</sub>alkylSOR<sup>4</sup>, OC<sub>1-6</sub>alkylSOR<sup>4</sup>, and X<sup>1</sup>R<sup>6</sup>;

$R^1$  is selected from the group consisting of a direct bond, O,  $\text{CONR}^7\text{R}^8$ ,  $\text{SO}_2\text{NR}^9\text{R}^{10}$ ,  $\text{SO}_2\text{R}^{11}$ , and  $\text{NR}^{12}\text{R}^{13}$ ;

$R^6$  is linked to  $R^8$ ,  $R^{10}$ ,  $R^{11}$ , and  $R^{13}$ ;

$R^7$ ,  $R^9$ , and  $R^{12}$  are each independently selected from hydrogen and  $\text{C}_{1-6}\text{alkyl}$ ;

$R^8$ ,  $R^{10}$ ,  $R^{11}$ , and  $R^{13}$  are each independently selected  $\text{C}_{1-6}\text{alkyl}$  groups;

$R^6$  is phenyl or a 5-, 6-, or 7-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein:

the heterocyclic group is saturated or unsaturated,

the phenyl or 5-, 6-, or 7-membered heterocyclic group is optionally fused with a 5- or 6-membered saturated or unsaturated ring containing atoms independently selected from C, N, O, and S, and

the phenyl or heterocyclic group is optionally substituted with one or two substituents selected from W;

m is 0, 1, 2, 3, or 4;

n is 0, 1, 2, 3, or 4;

$R^4$  is selected from the group consisting of hydrogen,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{2-6}\text{alkenyl}$ ,  $\text{C}_{2-6}\text{alkynyl}$ ,  $\text{C}_{0-6}\text{alkylC}_{3-6}\text{cycloalkyl}$ ,  $\text{C}_{0-6}\text{alkylaryl}$ ,  $\text{C}_{0-6}\text{alkylheteroaryl}$ ,  $\text{C}_{1-6}\text{alkylNR}^{14}\text{R}^{15}$ , and a 5- or 6-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein the heterocyclic group is optionally substituted by a group Y;

$R^5$  is selected from the group consisting of hydrogen,  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{2-6}\text{alkenyl}$ ,  $\text{C}_{2-6}\text{alkynyl}$ ,  $\text{C}_{0-6}\text{alkylC}_{3-6}\text{cycloalkyl}$ ,  $\text{C}_{0-6}\text{alkylaryl}$ ,  $\text{C}_{0-6}\text{alkylheteroaryl}$ , and  $\text{C}_{1-6}\text{alkylNR}^{14}\text{R}^{15}$ ;

wherein  $R^4$  and  $R^5$  optionally together form a 4-, 5-, 6- or 7-membered heterocyclic group containing one or more heteroatoms selected independently from N, O, and S, wherein the heterocyclic group is optionally substituted by a group Y; and

wherein any  $\text{C}_{1-6}\text{alkyl}$ ,  $\text{C}_{2-6}\text{alkenyl}$ ,  $\text{C}_{2-6}\text{alkynyl}$ ,  $\text{C}_{0-6}\text{alkylC}_{3-6}\text{cycloalkyl}$ ,  $\text{C}_{0-6}\text{alkylaryl}$ , and  $\text{C}_{0-6}\text{alkylheteroaryl}$  group defined under  $R^2$  to  $R^5$  is optionally substituted by one or more groups Z;

$R^{14}$  and  $R^{15}$  are independently selected from hydrogen,  $\text{C}_{1-6}\text{alkyl}$ , and  $\text{C}_{0-6}\text{alkylC}_{3-6}\text{cycloalkyl}$ ,

wherein R<sup>14</sup> and R<sup>15</sup> optionally together form a 5- or 6-membered heterocyclic group containing one or more heteroatoms independently selected from N, O, and S, wherein the heterocyclic group is optionally substituted by a group Y;

W and Z are independently selected from the group consisting of oxo, halogen, nitro, CN, OR<sup>16</sup>, C<sub>1-6</sub>alkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, OC<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, NR<sup>16</sup>R<sup>17</sup>, CONR<sup>16</sup>R<sup>17</sup>, NR<sup>16</sup>(CO)R<sup>17</sup>, O(CO)C<sub>1-6</sub>alkyl, (CO)OC<sub>1-6</sub>alkyl, COR<sup>16</sup>, (SO<sub>2</sub>)NR<sup>16</sup>R<sup>17</sup>, SO<sub>2</sub>R<sup>16</sup>, SOR<sup>16</sup>, (CO)C<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, (SO<sub>2</sub>)C<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, phenyl, heteroaryl, and a 5- or 6-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein the phenyl, heteroaryl, and heterocyclic groups are optionally substituted by a group Y; Y is selected from the group consisting of oxo, halogen, nitro, CN, OR<sup>16</sup>, C<sub>1-6</sub>alkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, OC<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, NR<sup>16</sup>R<sup>17</sup>, CONR<sup>16</sup>R<sup>17</sup>, NR<sup>16</sup>(CO)R<sup>17</sup>, O(CO)C<sub>1-6</sub>alkyl, (CO)OC<sub>1-6</sub>alkyl, COR<sup>16</sup>, (SO<sub>2</sub>)NR<sup>16</sup>R<sup>17</sup>, SO<sub>2</sub>R<sup>16</sup>, SOR<sup>16</sup>, (CO)C<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, (SO<sub>2</sub>)C<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, phenyl, C<sub>0-6</sub>alkylaryl, and heteroaryl, wherein the phenyl, C<sub>0-6</sub>alkylaryl, and heteroaryl groups are optionally substituted with one or more substituents selected from the group consisting of halogen, nitro, CN, OR<sup>16</sup>, C<sub>1-6</sub>alkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, and trifluoromethoxy; R<sup>16</sup> and R<sup>17</sup> are independently selected from hydrogen and C<sub>1-6</sub>alkyl, and wherein R<sup>16</sup> and R<sup>17</sup> optionally together form a 5- or 6-membered heterocyclic group containing one or more heteroatoms independently selected from N, O, and S;

2. (Original) The compound according to claim 1, wherein P is a 6-membered heteroaromatic ring containing one or two nitrogen atoms.

3. (Original) The compound according to claim 1, wherein P is pyridine.

4. (Previously presented) The compound according to claim 1, wherein P is pyrimidine.

5. (Previously presented) The compound according to claim 1, wherein the compound has Formula Ia.

6. (Previously presented) The compound according to claim 1, wherein:

$R^2$  and  $R^3$  are independently selected from the group consisting of halogen, nitro,  $C_{0-6}$ alkylheteroaryl, trifluoromethyl,  $C_{0-6}$ alkylcyano,  $C_{0-6}$ alkylNR<sup>4</sup>R<sup>5</sup>,  $C_{0-6}$ alkylCONR<sup>4</sup>R<sup>5</sup>, OC<sub>1-6</sub>alkylNR<sup>4</sup>R<sup>5</sup>,  $C_{0-6}$ alkyl(SO<sub>2</sub>)NR<sup>4</sup>R<sup>5</sup>, and X<sup>1</sup>R<sup>6</sup>;

X<sup>1</sup> is a direct bond;

R<sup>6</sup> is a 5-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein the heterocyclic group is optionally substituted with one or two substituents W;

m is 0, 1, or 2; and

n is 1 or 2.

7. (Previously presented) The compound according to claim 1, wherein:

R<sup>4</sup> is independently selected from the group consisting of hydrogen, C<sub>1-6</sub>alkyl,  $C_{0-6}$ alkylC<sub>3-6</sub>cycloalkyl,  $C_{0-6}$ alkylaryl,  $C_{0-6}$ alkylheteroaryl, C<sub>1-6</sub>alkylNR<sup>14</sup>R<sup>15</sup>, and a 5- or 6-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein the heterocyclic group is optionally substituted by a group Y;

R<sup>5</sup> is selected from hydrogen and C<sub>1-6</sub>alkyl;

wherein R<sup>4</sup> and R<sup>5</sup> optionally together form a 4-, 5-, 6- or 7-membered heterocyclic group containing one or more heteroatoms independently selected from N, O, and S, wherein the heterocyclic group is optionally substituted by a group Y;

any C<sub>1-6</sub>alkyl or  $C_{0-6}$ alkylaryl group defined under R<sup>2</sup> to R<sup>5</sup> is optionally substituted by one or more groups Z;

R<sup>14</sup> and R<sup>15</sup> are independently selected C<sub>1-6</sub>alkyl groups;

wherein R<sup>14</sup> and R<sup>15</sup> optionally together form a 5- or 6-membered heterocyclic group containing one or more heteroatoms independently selected from N, O, and S;

Z is independently selected from halogen, C<sub>1-6</sub>alkyl, CN, and NR<sup>16</sup>R<sup>17</sup>;

Y is selected from the group consisting of C<sub>1-6</sub>alkyl, C<sub>0-6</sub>alkylaryl, NR<sup>16</sup>R<sup>17</sup>, and phenyl, wherein the phenyl is optionally substituted with one or more groups selected from nitro and trifluoromethyl;

R<sup>16</sup> and R<sup>17</sup> are C<sub>1-6</sub>alkyl; and

wherein R<sup>16</sup> and R<sup>17</sup> optionally together form a 5- or 6-membered heterocyclic group containing one or more heteroatoms independently selected from N, O, and S.

8. (Previously presented) The compound according to claim 1, wherein:

P is pyridine;

R<sup>2</sup> is CN;

R<sup>3</sup> is C<sub>0-6</sub>alkylNR<sup>4</sup>R<sup>5</sup>; and

R<sup>4</sup> and R<sup>5</sup> optionally together form a 4-, 5-, 6- or 7-membered heterocyclic group containing one or more heteroatoms independently selected from N, O, and S.

9. (Previously presented) A compound selected from the group consisting of:

2-(5-Cyano-2-hydroxy-1*H*-indol-3-yl)-*N*-[2-(dimethylamino)ethyl]isonicotinamide;

2-Hydroxy-3-{4-[(4-methylpiperazin-1-yl)carbonyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile hydrochloride;

2-Hydroxy-3-{5-[(4-methylpiperazin-1-yl)carbonyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile;

2-Hydroxy-3-[5-(morpholin-4-ylmethyl)pyridin-2-yl]-1*H*-indole-5-carbonitrile hydrochloride;

2-Hydroxy-3-[6-(2-morpholin-4-ylethoxy)pyrimidin-4-yl]-1*H*-indole-5-carbonitrile;

2-Hydroxy-3-{5-[(4-methylpiperazin-1-yl)methyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile hydrochloride;

6-(5-Cyano-2-hydroxy-1*H*-indol-3-yl)-*N*-[2-(dimethylamino)ethyl]-*N*-methylnicotinamide hydrochloride;

2-Hydroxy-3-{5-[(4-methylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile hydrochloride;

6-(5-Cyano-2-hydroxy-1*H*-indol-3-yl)-*N*-(2-pyrrolidin-1-ylethyl)pyridine-3-sulfonamide hydrochloride;

2-Hydroxy-3-[5-(morpholin-4-ylmethyl)pyridin-2-yl]-1*H*-indole-5-carbonitrile;

2-Hydroxy-3-[5-(pyrrolidin-1-ylmethyl)pyridin-2-yl]-1*H*-indole-5-carbonitrile hydrochloride;  
2-Hydroxy-3-{5-[(4-methyl-1,4-diazepan-1-yl)methyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile hydrochloride;  
2-Hydroxy-3-{5-[(4-pyrrolidin-1-ylpiperidin-1-yl)methyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile hydrochloride;  
3-(5-{[3-(Dimethylamino)pyrrolidin-1-yl]methyl}pyridin-2-yl)-2-hydroxy-1*H*-indole-5-carbonitrile;  
2-Hydroxy-3-{5-[(4-methylpiperidin-1-yl)methyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile;  
2-Hydroxy-3-{5-[(4-phenylpiperazin-1-yl)methyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile;  
3-[5-(Azetidin-1-ylmethyl)pyridin-2-yl]-2-hydroxy-1*H*-indole-5-carbonitrile;  
2-Hydroxy-3-[5-{(4-[2-nitro-4-(trifluoromethyl)phenyl]piperazin-1-yl)methyl}pyridin-2-yl]-1*H*-indole-5-carbonitrile;  
3-(5-{[(2-Cyanoethyl)(ethyl)amino]methyl}pyridin-2-yl)-2-hydroxy-1*H*-indole-5-carbonitrile;  
3-(5-{[(4-Chlorobenzyl)(methyl)amino]methyl}pyridin-2-yl)-2-hydroxy-1*H*-indole-5-carbonitrile;  
3-(5-{[(2-Furylmethyl)(methyl)amino]methyl}pyridin-2-yl)-2-hydroxy-1*H*-indole-5-carbonitrile;  
2-Hydroxy-3-(5-{[methyl(phenyl)amino]methyl}pyridin-2-yl)-1*H*-indole-5-carbonitrile;  
2-Hydroxy-3-{5-[(3-methylpiperidin-1-yl)methyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile;  
3-(5-{[Cyclohexyl(methyl)amino]methyl}pyridin-2-yl)-2-hydroxy-1*H*-indole-5-carbonitrile;  
2-Hydroxy-3-[5-(piperidin-1-ylmethyl)pyridin-2-yl]-1*H*-indole-5-carbonitrile;  
3-{5-[(4-Methylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-1*H*-indol-2-ol hydrochloride;  
6-Chloro-3-{5-[(4-methylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-1*H*-indol-2-ol hydrochloride;  
3-[5-(Morpholin-4-ylcarbonyl)pyridin-2-yl]-5-nitro-1*H*-indol-2-ol;  
6-Bromo-3-[5-(morpholin-4-ylmethyl)pyridin-2-yl]-1*H*-indol-2-ol hydrochloride;  
2-Hydroxy-3-[5-(morpholin-4-ylmethyl)pyridin-2-yl]-1*H*-indole-6-carbonitrile hydrochloride;  
5-Bromo-3-[5-(morpholin-4-ylmethyl)pyridin-2-yl]-1*H*-indol-2-ol hydrochloride;  
5,6-Dibromo-3-[5-(morpholin-4-ylmethyl)pyridin-2-yl]-1*H*-indol-2-ol hydrochloride;  
3-Fluoro-3-[5-(morpholin-4-ylmethyl)pyridin-2-yl]-2-oxoindoline-6-carbonitrile hydrochloride;

3-{5-[(4-Benzylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-2-hydroxy-1*H*-indole-5-carbonitrile hydrochloride;  
2-Hydroxy-3-{5-[[4-(3-methylbutyl)piperazin-1-yl)sulfonyl]pyridin-2-yl]-1*H*-indole-5-carbonitrile hydrochloride;  
2-Hydroxy-3-{5-[(4-isopropylpiperazin-1-yl)sulfonyl]pyridin-2-yl]-1*H*-indole-5-carbonitrile hydrochloride;  
3-{5-[(4-Ethylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-2-hydroxy-1*H*-indole-5-carbonitrile hydrochloride;  
3-[5-(Morpholin-4-ylmethyl)pyridin-2-yl]-5-pyridin-3-yl-1*H*-indol-2-ol;  
3-[5-(Morpholin-4-ylmethyl)pyridin-2-yl]-5-thien-2-yl-1*H*-indol-2-ol hydrochloride;  
5-(2-Furyl)-3-[5-(morpholin-4-ylmethyl)pyridin-2-yl]-1*H*-indol-2-ol hydrochloride;  
3-{3-Bromo-5-[(4-methylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-5-nitro-1*H*-indol-2-ol hydrochloride;  
3-[5-(Morpholin-4-ylmethyl)pyridin-2-yl]-5-(trifluoromethyl)-1*H*-indol-2-ol hydrochloride;  
2-Hydroxy-3-{5-[(4-methylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-1*H*-indole-6-carbonitrile hydrochloride;  
*N*-[(1-Ethylpyrrolidin-2-yl)methyl]-6-(2-hydroxy-5-nitro-1*H*-indol-3-yl)nicotinamide hydrochloride;  
6-(2-Hydroxy-5-nitro-1*H*-indol-3-yl)-*N*-(2-morpholin-4-ylethyl)nicotinamide hydrochloride;  
6-(2-Hydroxy-5-nitro-1*H*-indol-3-yl)-*N*-methyl-*N*-(1-methylpiperidin-4-yl)nicotinamide hydrochloride;  
5-Nitro-3-{5-[(4-pyrrolidin-1-yl)piperidin-1-yl]carbonyl]pyridin-2-yl}-1*H*-indol-2-ol hydrochloride;  
3-(5-{[3-(Dimethylamino)pyrrolidin-1-yl]carbonyl}pyridin-2-yl)-5-nitro-1*H*-indol-2-ol hydrochloride;  
*N*-[2-(Dimethylamino)-1-methylethyl]-6-(2-hydroxy-5-nitro-1*H*-indol-3-yl)nicotinamide hydrochloride;  
6-(2-Hydroxy-5-nitro-1*H*-indol-3-yl)-*N*-(2-pyrrolidin-1-ylethyl)nicotinamide fumarate;  
3-{5-[(4-Methylpiperazin-1-yl)carbonyl]pyridin-2-yl}-5-nitro-1*H*-indol-2-ol fumarate;

6-(5-Cyano-2-hydroxy-1*H*-indol-3-yl)-*N*-(2-pyrrolidin-1-ylethyl)nicotinamide fumarate;  
6-(5-Cyano-2-hydroxy-1*H*-indol-3-yl)-*N*-methyl-*N*-(2-pyrrolidin-1-ylethyl)pyridine-3-sulfonamide hydrochloride;  
6-(5-Cyano-2-hydroxy-1*H*-indol-3-yl)-*N*-[2-(dimethylamino)ethyl]pyridine-3-sulfonamide fumarate;  
6-(5-Cyano-2-hydroxy-1*H*-indol-3-yl)-*N*-[2-(dimethylamino)ethyl]-*N*-ethylpyridine-3-sulfonamide fumarate;  
6-(5-Cyano-2-hydroxy-1*H*-indol-3-yl)-*N*-[(1-ethylpyrrolidin-2-yl)methyl]pyridine-3-sulfonamide fumarate;  
2-Hydroxy-3-{5-[(4-methyl-1,4-diazepan-1-yl)sulfonyl]pyridin-2-yl}-1*H*-indole-5-carbonitrile fumarate;  
2-Hydroxy-3-[5-(morpholin-4-ylsulfonyl)pyridin-2-yl]-1*H*-indole-5-carbonitrile;  
3-{5-[(4-Methylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-5-(2-methyl-1,3-thiazol-4-yl)-1*H*-indol-2-ol hydrochloride;  
3-{5-[(4-Methylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-5-(1,3-thiazol-4-yl)-1*H*-indol-2-ol fumarate;  
3-{5-[(4-Methylpiperazin-1-yl)sulfonyl]pyridin-2-yl}-5-(1,3-oxazol-5-yl)-1*H*-indol-2-ol; and  
3-[5-(Morpholin-4-ylmethyl)pyridin-2-yl]-5-nitro-1*H*-indol-2-ol hydrochloride.

10. (Previously presented) A pharmaceutical formulation comprising as active ingredient a therapeutically effective amount of a compound according to any one of claims 1 to 9 and one or more pharmaceutically acceptable carriers or diluents.

11-17. (Canceled)

18. (Previously presented) A method for the prevention and/or treatment of conditions associated with glycogen synthase kinase-3, the method comprising administering a therapeutically effective amount of a compound according to any one of claims 1 to 9 to a patient in need thereof.



19. (Previously presented) A method for the prevention and/or treatment of a medical condition selected from the group consisting of dementia, Alzheimer's Disease, Parkinson's Disease, Frontotemporal dementia Parkinson's Type, Parkinson dementia complex of Guam, HIV dementia, diseases with associated neurofibrillar tangle pathologies, and dementia pugilistica, the method comprising administering a therapeutically effective amount of a compound according to any one of claims 1 to 9 to a patient in need thereof.

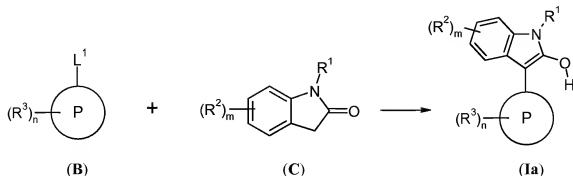
20. (Previously presented) The method according to claim 19, wherein the medical condition is Alzheimer's Disease.

21. (Previously presented) A method for the prevention and/or treatment of a medical condition selected from the group consisting of amyotrophic lateral sclerosis, corticobasal degeneration, Down syndrome, Huntington's Disease, postencephalic parkinsonism, progressive supranuclear palsy, Pick's Disease, Niemann-Pick's Disease, stroke, head trauma, chronic neurodegenerative diseases, Bipolar Disease, affective disorders, depression, schizophrenia, cognitive disorders, hair loss, and pregnancy, the method comprising administering a therapeutically effective amount of a compound according to any one of claims 1 to 9 to a patient in need thereof.

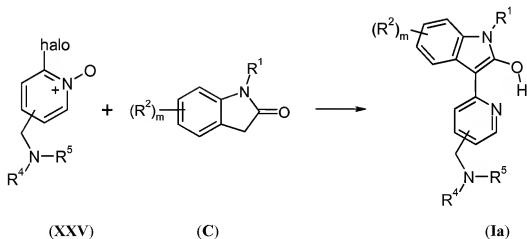
22. (Previously presented) A method for the prevention and/or treatment of a medical condition selected from the group consisting of predemented states, Mild Cognitive Impairment, Age-Associated Memory Impairment, Age-Related Cognitive Decline, Cognitive Impairment No Dementia, mild cognitive decline, mild neurocognitive decline, Late-Life Forgetfulness, memory impairment, cognitive impairment, vascular dementia, dementia with Lewy bodies, Frontotemporal dementia, and androgenetic alopecia, the method comprising administering a therapeutically effective amount of a compound according to any one of claims 1 to 9 to a patient in need thereof.

23. (Previously presented) A process for the preparation of a compound of formula Ia according to claim 1, the process comprising a step selected from the group consisting of:

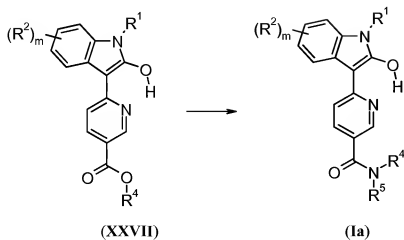
a) reacting a compound of formula B, wherein  $L^1$  is a leaving group, with a compound of formula C, wherein P,  $R^1$ ,  $R^2$ ,  $R^3$ , m, and n are as defined in claim 1, in a solvent at a temperature between  $+10^\circ\text{C}$  and  $+150^\circ\text{C}$ , to form the compound of formula Ia;



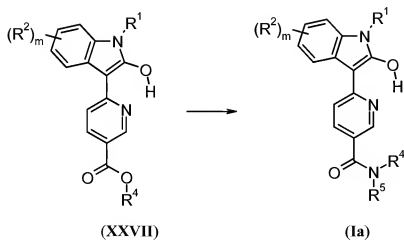
b) reacting a compound of formula XXV, wherein halo is halogen, with a compound of formula C, wherein  $R^1$ ,  $R^2$ ,  $R^4$ ,  $R^5$ , and m are as defined in claim 1, in a solvent at a temperature between  $+10^\circ\text{C}$  and  $+150^\circ\text{C}$ , to form the compound of formula Ia;



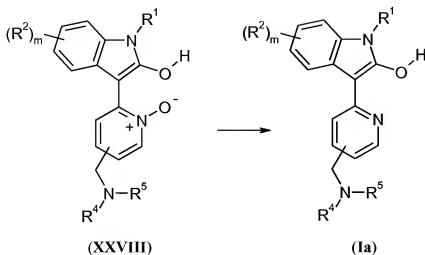
c) reacting a compound of formula XXVII, wherein  $R^4$  is  $\text{C}_{1-6}$ alkyl, with an amine of formula  $\text{HNR}^4\text{R}^5$ , wherein  $R^1$ ,  $R^2$ , and  $R^5$  are defined in claim 1, and wherein  $R^4$  in the amine and in the compound of formula XXVII is the same or different, in a solvent in the presence of a reagent at a reaction temperature between  $0^\circ\text{C}$  and reflux, to form the compound of formula Ia;



d) reacting a compound of formula XXVII with an amine of formula  $R^4R^5NH$ , wherein  $R^4$  is  $C_{1-6}$ alkyl and  $R^1, R^2, R^5$ , and  $m$  are defined in claim 1, and wherein  $R^4$  in the amine and in the compound of formula XXVII is the same or different, neat or in a solvent, optionally in the presence of a base, at a temperature between  $-20^\circ\text{C}$  and  $+150^\circ\text{C}$ , to form the compound of formula Ia; and

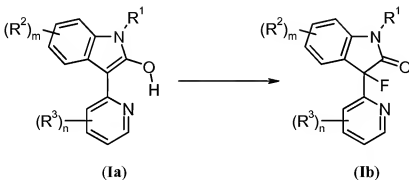


e) reducing the *N*-oxide in a compound of formula XXVIII with a reagent in a solvent at a temperature between  $0^\circ\text{C}$  and  $+100^\circ\text{C}$ , to form the compound of formula Ia, wherein  $R^1, R^2, R^4, R^5$ , and  $m$  are defined in claim 1.



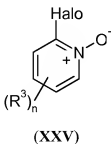
24. (Previously presented) A process for the preparation of a compound of formula Ib according to claim 1, the process comprising:

fluorinating a compound of formula Ia,



in a solvent in the presence of a fluorinating reagent and a base at a reaction temperature between  $-40^{\circ}\text{C}$  and  $+80^{\circ}\text{C}$ , to form the compound of formula Ib, wherein  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ , m, and n are as defined in claim 1.

25. (Previously presented) A compound according to formula XXV,



wherein:

Halo is halogen;

R<sup>3</sup> is selected from the group consisting of halogen, nitro, C<sub>1-6</sub>alkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, OC<sub>1-6</sub>alkylNR<sup>4</sup>R<sup>5</sup>, C<sub>0-6</sub>alkylcyano, C<sub>0-6</sub>alkylCONR<sup>4</sup>R<sup>5</sup>, C<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>4</sup>R<sup>5</sup>, C<sub>0-6</sub>alkylNR<sup>4</sup>R<sup>5</sup>, and X<sup>1</sup>R<sup>6</sup>;

X<sup>1</sup> is selected from the group consisting of a direct bond, O, CONR<sup>7</sup>R<sup>8</sup>, SO<sub>2</sub>NR<sup>9</sup>R<sup>10</sup>, SO<sub>2</sub>R<sup>11</sup>, and NR<sup>12</sup>R<sup>13</sup>;

R<sup>7</sup>, R<sup>9</sup>, and R<sup>12</sup> are each independently selected from hydrogen and C<sub>1-3</sub>alkyl;

R<sup>8</sup>, R<sup>10</sup>, R<sup>11</sup>, and R<sup>13</sup> are each independently selected C<sub>0-4</sub>alkyl groups;

R<sup>6</sup> is phenyl or a 5-, 6- or 7-membered heterocyclic group containing one or two heteroatoms selected independently from N, O, and S, wherein:

the heterocyclic group is saturated or unsaturated,

the phenyl or 5-, 6- or 7-membered heterocyclic group is optionally fused with a 5- or 6-membered saturated or unsaturated ring containing atoms selected independently from C, N, O, and S, and

the phenyl or heterocyclic group is optionally substituted with one or two substituents selected from W; and

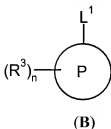
R<sup>6</sup> is linked to R<sup>8</sup>, R<sup>10</sup>, R<sup>11</sup>, and R<sup>13</sup>.

26. (Previously presented) The compound according to claim 25, wherein R<sup>3</sup> is C<sub>0-6</sub>alkylNR<sup>4</sup>R<sup>5</sup>; and n is 1.

27. (Previously presented) A compound selected from the group consisting of:  
1-[(6-Chloropyridin-3-yl)methyl]-4-methylpiperazine;

2-Chloro-5-(morpholin-4-ylmethyl)pyridine 1-oxide;  
2-Chloro-5-(pyrrolidin-1-ylmethyl)pyridine 1-oxide;  
1-[(6-Chloro-1-oxidopyridin-3-yl)methyl]-4-methyl-1,4-diazepane;  
2-Chloro-5-[(4-pyrrolidin-1-ylpiperidin-1-yl)methyl]pyridine 1-oxide;  
1-[(6-Chloro-1-oxidopyridin-3-yl)methyl]-*N,N*-dimethylpyrrolidin-3-amine;  
2-Chloro-5-[(4-methylpiperidin-1-yl)methyl]pyridine 1-oxide;  
1-[(6-Chloro-1-oxidopyridin-3-yl)methyl]-4-phenylpiperazine;  
1-[(6-Chloro-1-oxidopyridin-3-yl)methyl]-4-[2-nitro-4-(trifluoromethyl)phenyl]piperazine;  
3-[[[(6-Chloro-1-oxidopyridin-3-yl)methyl](ethyl)amino]propanenitrile;  
*N*-(4-Chlorobenzyl)-*N*-[(6-chloro-1-oxidopyridin-3-yl)methyl]-*N*-methylamine;  
*N*-[(6-Chloro-1-oxidopyridin-3-yl)methyl]-*N*-(2-furylmethyl)-*N*-methylamine;  
*N*-[(6-Chloro-1-oxidopyridin-3-yl)methyl]-*N*-methyl-*N*-phenylamine;  
5-(Azetidin-1-ylmethyl)-2-chloropyridine 1-oxide;  
2-Chloro-5-[(3-methylpiperidin-1-yl)methyl]pyridine 1-oxide;  
*N*-[(6-Chloro-1-oxidopyridin-3-yl)methyl]-*N*-cyclohexyl-*N*-methylamine; and  
2-Chloro-5-(piperidin-1-ylmethyl)pyridine 1-oxide.

28. (Previously presented) A compound according to formula B,



wherein:

P is a 5- or 6-membered heteroaromatic ring containing one or two heteroatoms selected independently from N, O, and S, of which at least one heteroatom is nitrogen;

$L^1$  is a leaving group;

$R^3$  is selected from the group consisting of halogen, nitro,  $C_{1-6}$ alkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy,

$\text{OC}_{1-6}\text{alkylNR}^4\text{R}^5$ ,  $\text{C}_{0-6}\text{alkylcyano}$ ,  $\text{C}_{0-6}\text{alkylCONR}^4\text{R}^5$ ,  $\text{C}_{0-6}\text{alkyl}(\text{SO}_2)\text{NR}^4\text{R}^5$ ,  $\text{C}_{0-6}\text{alkylNR}^4\text{R}^5$ , and  $\text{X}^1\text{R}^6$ ;

$\text{X}^1$  is selected from the group consisting of a direct bond, O,  $\text{CONR}^7\text{R}^8$ ,  $\text{SO}_2\text{NR}^9\text{R}^{10}$ ,  $\text{SO}_2\text{R}^{11}$ , and  $\text{NR}^{12}\text{R}^{13}$ ;

$\text{R}^7$ ,  $\text{R}^9$ , and  $\text{R}^{12}$  are each independently selected from hydrogen and  $\text{C}_{1-3}\text{alkyl}$ ;

$\text{R}^8$ ,  $\text{R}^{10}$ ,  $\text{R}^{11}$ , and  $\text{R}^{13}$  are each independently selected  $\text{C}_{0-4}\text{alkyl}$  groups;

$\text{R}^6$  is phenyl or a 5-, 6- or 7-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein:

the heterocyclic group is saturated or unsaturated,

the phenyl or 5-, 6- or 7-membered heterocyclic group is optionally fused with a 5- or 6-membered saturated or unsaturated ring containing atoms independently selected from C, N, O, and S, and

the phenyl or heterocyclic group is optionally substituted with one or two substituents selected from W; and

$\text{R}^6$  is linked to  $\text{R}^8$ ,  $\text{R}^{10}$ ,  $\text{R}^{11}$ , and  $\text{R}^{13}$ .

29. (Previously presented) The compound according to claim 28, wherein:

P is a pyridine or pyrimidine ring;

$\text{L}^1$  is a leaving group;

$\text{R}^3$  is selected from the group consisting of  $\text{C}_{0-6}\text{alkylCONR}^4\text{R}^5$ ,  $\text{C}_{0-6}\text{alkyl}(\text{SO}_2)\text{NR}^4\text{R}^5$ , and  $\text{C}_{0-6}\text{alkylNR}^4\text{R}^5$ ; and

n is 1.

30. (Previously presented) A compound selected from the group consisting of:

2-Chloro-*N*-[2-(dimethylamino)ethyl]isonicotinamide;

1-(2-Chloroisonicotinoyl)-4-methylpiperazine;

6-Chloro-*N*-[2-(dimethylamino)ethyl]-*N*-methylnicotinamide;

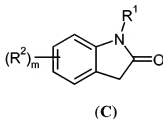
4-{2-[(6-Chloropyrimidin-4-yl)oxy]ethyl}morpholine;

1-Benzyl-4-[(6-chloropyridine-3-yl)sulfonyl]piperazine;

1-[(6-Chloropyridin-3-yl)sulfonyl]-4-(3-methylbutyl)piperazine;

1-[(6-Chloropyridin-3-yl)sulfonyl]-4-isopropylpiperazine;  
1-[(6-Chloropyridin-3-yl)sulfonyl]-4-ethylpiperazine;  
1-[(5-Bromo-6-chloropyridin-3-yl)sulfonyl]-4-methylpiperazine;  
6-Chloro-*N*-methyl-*N*-(2-pyrrolidin-1-ylethyl)pyridine-3-sulfonamide;  
6-Chloro-*N*-[2-(dimethylamino)ethyl]pyridine-3-sulfonamide;  
6-Chloro-*N*-[2-(dimethylamino)ethyl]-*N*-ethylpyridine-3-sulfonamide;  
6-Chloro-*N*-[(1-ethylpyrrolidin-2-yl)methyl]pyridine-3-sulfonamide;  
1-[(6-Chloropyridin-3-yl)sulfonyl]-4-methyl-1,4-diazepane; and  
4-[(6-Chloropyridin-3-yl)sulfonyl]morpholine.

31. (Previously presented) A compound according to formula C,



wherein:

$R^1$  is hydrogen;

$R^2$  is selected from the group consisting of halogen, nitro,  $C_{1-6}$ alkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy,  $OC_{1-6}alkylNR^4R^5$ ,  $C_{0-6}alkylcyano$ ,  $C_{0-6}alkylCONR^4R^5$ ,  $C_{0-6}alkyl(SO_2)NR^4R^5$ ,  $C_{0-6}alkylNR^4R^5$ , and  $X^1R^6$ ;

$X^1$  is selected from the group consisting of a direct bond, O,  $CONR^7R^8$ ,  $SO_2NR^9R^{10}$ ,  $SO_2R^{11}$ , and  $NR^{12}R^{13}$ ;

$R^7$ ,  $R^9$ , and  $R^{12}$  are each independently selected from hydrogen and  $C_{1-3}alkyl$ ;

$R^8$ ,  $R^{10}$ ,  $R^{11}$ , and  $R^{13}$  are each independently selected  $C_{0-4}alkyl$  groups;

$R^6$  is phenyl or a 5-, 6- or 7-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein:

the heterocyclic group is saturated or unsaturated,



the phenyl or 5-, 6- or 7-membered heterocyclic group is optionally fused with a 5- or 6-membered saturated or unsaturated ring containing atoms independently selected from C, N, O, and S, and

the phenyl or heterocyclic group is optionally substituted with one or two substituents selected from W; and

R<sup>6</sup> is linked to R<sup>8</sup>, R<sup>10</sup>, R<sup>11</sup>, and R<sup>13</sup>.

32. (Previously presented) The compound according to claim 31, wherein:

R<sup>1</sup> is hydrogen;

R<sup>2</sup> is selected from halogen and X<sup>1</sup>R<sup>6</sup>;

X<sup>1</sup> is a direct bond;

R<sup>6</sup> is a 5- or 6-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S; and

m is 1 or 2.

33. (Previously presented) A compound selected from the group consisting of:

5,6-Dibromo-1,3-dihydroindol-2-one;

5-Pyridin-3-yl-1,3-dihydro-2*H*-indol-2-one;

5-Thien-2-yl-1,3-dihydro-2*H*-indol-2-one;

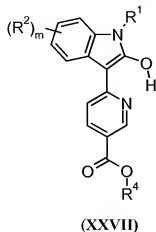
5-(2-Furyl)-1,3-dihydro-2*H*-indol-2-one;

5-(1,3-Oxazol-5-yl)-1,3-dihydro-2*H*-indol-2-one;

5-(1,3-Thiazol-4-yl)-1,3-dihydro-2*H*-indol-2-one; and

5-(2-Methyl-1,3-thiazol-4-yl)-1,3-dihydro-2*H*-indol-2-one.

34. (Previously presented) A compound according to formula XXVII,



wherein:

$R^1$  is hydrogen;

$R^2$  is selected from the group consisting of halogen, nitro,  $C_{1-6}$ alkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy,  $OC_{1-6}alkylNR^4R^5$ ,  $C_{0-6}alkylcyano$ ,  $C_{0-6}alkylCONR^4R^5$ ,  $C_{0-6}alkyl(SO_2)NR^4R^5$ ,  $C_{0-6}alkylNR^4R^5$ , and  $X^1R^6$ ;

$X^1$  is selected from the group consisting of a direct bond, O,  $CONR^7R^8$ ,  $SO_2NR^9R^{10}$ ,  $SO_2R^{11}$ , and  $NR^{12}R^{13}$ ;

$R^7$ ,  $R^9$ , and  $R^{12}$  are each independently selected from hydrogen and  $C_{1-3}alkyl$ ;

$R^8$ ,  $R^{10}$ ,  $R^{11}$ , and  $R^{13}$  are each independently selected  $C_{0-4}alkyl$  groups;

$R^6$  is phenyl or a 5-, 6- or 7-membered heterocyclic group containing one or two heteroatoms selected independently from N, O, and S, wherein:

the heterocyclic group is saturated or unsaturated,

the phenyl or 5-, 6- or 7-membered heterocyclic group is optionally fused with a 5- or 6-membered saturated or unsaturated ring containing atoms independently selected from C, N, O, and S, and

the phenyl or heterocyclic group is optionally substituted with one or two substituents selected from W; and

$R^6$  is linked to  $R^8$ ,  $R^{10}$ ,  $R^{11}$ , and  $R^{13}$ .

35. (Previously presented) The compound according to claim 34, wherein:

R<sup>1</sup> is hydrogen;

R<sup>2</sup> is selected from nitro and cyano; and

m is 1.

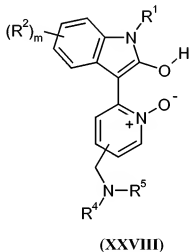
36. (Previously presented) A compound selected from the group consisting of:

Ethyl 6-(2-hydroxy-5-nitro-1*H*-indol-3-yl)nicotinate; and

Ethyl 6-(2-hydroxy-5-cyano-1*H*-indol-3-yl)nicotinate;

as a free base or a salt thereof.

37. (Previously presented) A compound of formula XXVIII,



wherein:

R<sup>1</sup> is hydrogen;

R<sup>2</sup> is selected from the group consisting of halogen, nitro, C<sub>1-6</sub>alkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, OC<sub>1-6</sub>alkylNR<sup>4</sup>R<sup>5</sup>, C<sub>0-6</sub>alkylcyano, C<sub>0-6</sub>alkylCONR<sup>4</sup>R<sup>5</sup>, C<sub>0-6</sub>alkyl(SO<sub>2</sub>)NR<sup>4</sup>R<sup>5</sup>, C<sub>0-6</sub>alkylNR<sup>4</sup>R<sup>5</sup>, and X<sup>1</sup>R<sup>6</sup>;

X<sup>1</sup> is selected from the group consisting of a direct bond, O, CONR<sup>7</sup>R<sup>8</sup>, SO<sub>2</sub>NR<sup>9</sup>R<sup>10</sup>, SO<sub>2</sub>R<sup>11</sup>, and NR<sup>12</sup>R<sup>13</sup>;

$R^7$ ,  $R^9$ , and  $R^{12}$  are each independently selected from hydrogen and  $C_{1-3}$ alkyl;  
 $R^8$ ,  $R^{10}$ ,  $R^{11}$ , and  $R^{13}$  are independently selected  $C_{0-4}$ alkyl groups;  
 $R^6$  is phenyl or a 5-, 6- or 7-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein:  
the heterocyclic group is saturated or unsaturated,  
the phenyl or 5-, 6- or 7-membered heterocyclic group is optionally fused with a 5- or 6-membered saturated or unsaturated ring containing atoms selected independently from C, N, O, and S, and  
the phenyl or heterocyclic group is optionally substituted with one or two substituents selected from W; and  
 $R^6$  is linked to  $R^8$ ,  $R^{10}$ ,  $R^{11}$ , and  $R^{13}$ .

38. (Previously presented) The compound according to claim 37, wherein:

$R^1$  is hydrogen;

$R^2$  is  $X^1R^6$ ;

$X^1$  is a direct bond;

$R^6$  is a 5- or 6-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S; and

m is 1.

39. (Previously presented) A compound selected from the group consisting of:

3-[5-(Morpholin-4-ylmethyl)-1-oxidopyridin-2-yl]-5-pyridin-3-yl-1*H*-indol-2-ol;

3-[5-(Morpholin-4-ylmethyl)-1-oxidopyridin-2-yl]-5-thien-2-yl-1*H*-indol-2-ol; and

5-(2-Furyl)-3-[5-(morpholin-4-ylmethyl)-1-oxidopyridin-2-yl]-1*H*-indol-2-ol,

wherein the compound is in the form of a free base or a salt thereof.

40. (Previously presented) A compound selected from the group consisting of:

5-(Hydroxymethyl)-1,3-dihydro-2*H*-indol-2-one;

2-Oxoindoline-5-carbaldehyde; and

5-(Chloroacetyl)-1,3-dihydro-2*H*-indol-2-one;

wherein the compound is in the form of a free base or a salt thereof.

41. (Canceled)

42. (Previously presented) The compound according to claim 6, wherein W is C<sub>1-6</sub>alkyl.

43. (Previously presented) The process according to claim 23, wherein L<sup>1</sup> is a halogen.

44. (Previously presented) The process according to claim 43, wherein the halogen is fluorine, chlorine, or bromine.

45. (Previously presented) The process according to claim 23, wherein the halogen in process b) is fluorine, chlorine, or bromine.

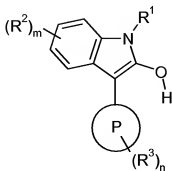
46. (Previously presented) The compound according to claim 28, wherein the leaving group is a halogen.

47. (Previously presented) The compound according to claim 45, wherein the halogen is fluorine, chlorine, or bromine.

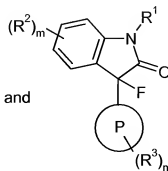
48. (Previously presented) The compound according to claim 29, wherein the leaving group is a halogen.

49. (Previously presented) The compound according to claim 47, wherein the halogen is chlorine.

50. (New) A compound of formula **1a** or **1b**,



(1a)



(1b)

wherein the compound is in the form of a free base or a pharmaceutically acceptable salt thereof, and wherein:

P is a 6-membered ring containing one nitrogen;

R<sup>1</sup> is hydrogen;

R<sup>2</sup> is C<sub>0-6</sub> alkylcyano;

R<sup>3</sup> is C<sub>0-6</sub> alkyl R<sup>4</sup> R<sup>5</sup>;

m is 1;

n is 1;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl, C<sub>1-6</sub>alkylNR<sup>14</sup>R<sup>15</sup>, and a 5- or 6-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein the heterocyclic group is optionally substituted by a group Y;

R<sup>5</sup> is selected from the group consisting of hydrogen, C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylheteroaryl, and C<sub>1-6</sub>alkylNR<sup>14</sup>R<sup>15</sup>;

wherein R<sup>4</sup> and R<sup>5</sup> may together form a 6-membered heterocyclic group containing one nitrogen and one oxygen; and

wherein any C<sub>1-6</sub>alkyl, C<sub>2-6</sub>alkenyl, C<sub>2-6</sub>alkynyl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, C<sub>0-6</sub>alkylaryl, and C<sub>0-6</sub>alkylheteroaryl group defined under R<sup>2</sup> to R<sup>5</sup> is optionally substituted by one or more groups Z; R<sup>14</sup> and R<sup>15</sup> are independently selected from hydrogen, C<sub>1-6</sub>alkyl, and C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, wherein R<sup>14</sup> and R<sup>15</sup> optionally together form a 5- or 6-membered heterocyclic group containing one or more heteroatoms independently selected from N, O, and S, wherein the heterocyclic group is optionally substituted by a group Y;

Z is independently selected from the group consisting of oxo, halogen, nitro, CN, OR<sup>16</sup>, C<sub>1-6</sub>alkyl, C<sub>0-6</sub>alkylaryl, C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, OC<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, NR<sup>16</sup>R<sup>17</sup>, CONR<sup>16</sup>R<sup>17</sup>, NR<sup>16</sup>(CO)R<sup>17</sup>, O(CO)C<sub>1-6</sub>alkyl, (CO)OC<sub>1-6</sub>alkyl, COR<sup>16</sup>, (SO<sub>2</sub>)NR<sup>16</sup>R<sup>17</sup>, SO<sub>2</sub>R<sup>16</sup>, SOR<sup>16</sup>, (CO)C<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, (SO<sub>2</sub>)C<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, phenyl, heteroaryl, and a 5- or 6-membered heterocyclic group containing one or two heteroatoms independently selected from N, O, and S, wherein the phenyl, heteroaryl, and heterocyclic groups are optionally substituted by a group Y;

Y is selected from the group consisting of oxo, halogen, nitro, CN, OR<sup>16</sup>, C<sub>1-6</sub>alkyl, C<sub>0-6</sub>alkylaryl,

C<sub>0-6</sub>alkylC<sub>3-6</sub>cycloalkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, trifluoromethoxy, OC<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, NR<sup>16</sup>R<sup>17</sup>, CONR<sup>16</sup>R<sup>17</sup>, NR<sup>16</sup>(CO)R<sup>17</sup>, O(CO)C<sub>1-6</sub>alkyl, (CO)OC<sub>1-6</sub>alkyl, COR<sup>16</sup>, (SO<sub>2</sub>)NR<sup>16</sup>R<sup>17</sup>, SO<sub>2</sub>R<sup>16</sup>, SOR<sup>16</sup>, (CO)C<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, (SO<sub>2</sub>)C<sub>1-6</sub>alkylNR<sup>16</sup>R<sup>17</sup>, phenyl, C<sub>0-6</sub>alkylaryl, and heteroaryl, wherein the phenyl, C<sub>0-6</sub>alkylaryl, and heteroaryl groups are optionally substituted with one or more substituents selected from the group consisting of halogen, nitro, CN, OR<sup>16</sup>, C<sub>1-6</sub>alkyl, fluoromethyl, difluoromethyl, trifluoromethyl, fluoromethoxy, difluoromethoxy, and trifluoromethoxy; R<sup>16</sup> and R<sup>17</sup> are independently selected from hydrogen and C<sub>1-6</sub>alkyl, and wherein R<sup>16</sup> and R<sup>17</sup> optionally together form a 5- or 6-membered heterocyclic group containing one or more heteroatoms independently selected from N, O, and S.